



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/587,113

06/25/2008

Rachel Yerushalmi-Rozen

0-06-165

9526

42009

7590

07/29/2009

KEVIN D. MCCARTHY

ROACH BROWN MCCARTHY & GRUBER, P.C.

424 MAIN STREET

1920 LIBERTY BUILDING

BUFFALO, NY 14202

EXAMINER

NERANGIS, VICKY MARIE

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

07/29/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,113	Applicant(s) YERUSHALMI-ROZEN, RACHEL	
	Examiner VICKEY NERANGIS	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 18-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/24/06, 10/6/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of the restriction requirement in the reply filed on 4/20/2009 is acknowledged. The traversal is on the ground(s) that the common feature that unites the invention is not novel in view of Kang et al because Kang et al teaches micelles, crosslinked block copolymer, and water. This is not found persuasive because the instant claims do not exclude micelles, crosslinked block copolymer, or water.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 18-39 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Applicant timely traversed the restriction (election) requirement in the reply filed on 4/20/2009.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "the sonication" lacks antecedent basis.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1796

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-13, 15, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Kang et al (*J. Am. Chem. Soc.* 2003, 125, 5650-5651).

Kang et al discloses a method of encapsulating single-walled carbon nanotube with micelles derived from block copolymers styrene-acrylic acid copolymers having more than 10 monomers in each block (page 5660). The block copolymer is dissolved in a solvent before single-walled carbon nanotubes are added and suspended with ultrasonication. After the addition of water, the micelle-encapsulated nanotubes are then purified with dialysis and centrifuging (page 5650). The micelle-encapsulated nanotubes are highly soluble in many solvents including water (page 5651). See entire document.

In light of the above, it is clear that Kang et al anticipates the presently cited claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1796

5. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kang et al (*J. Am. Chem. Soc.* 2003, 125, 5650-5651) in view of WO '888 (WO 02/076888).

The discussion with respect to Kang et al in paragraph 4 above is incorporated here by reference.

Kang et al fails to disclose the concentrations of carbon nanotubes and block copolymer in suspension.

Even so, it is the examiner's position that the concentration of carbon nanotubes and block copolymer in suspension is a result effective variable because changing it will clearly affect the type of product obtained. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Specifically, an amount that is too large would not be able to maintain suspension of solid particulates. Further evidence to support the examiner's position is found in WO '888 which discloses a polymer-treated nanotube in suspension and teaches that a suitable amount is less than 65 wt % (page 3, claim 5).

In view of this, it would have been obvious to one of ordinary skill in the art to utilize appropriate concentrations including those within the scope of the present claims so as to produce desired end results.

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kang et al (*J. Am. Chem. Soc.* 2003, 125, 5650-5651) in view of Stupp et al (US 6,890,654).

Art Unit: 1796

The discussion with respect to Kang et al in paragraph 4 above is incorporated here by reference.

Kang et al fails to disclose the relative amounts of block copolymer to carbon nanotube.

Stupp et al discloses nanotubes encapsulated in an amphiphilic material and teaches that a suitable ratio of amphiphile to carbon nanotube is 50:1 to 1000:1 (col. 10, lines 56-59), which overlaps with the presently claimed range.

Given that Kang et al and Stupp et al both disclose a carbon nanotube encapsulated in an amphiphilic material, it would have been obvious to one of ordinary skill in the art to utilize the relative amounts taught by Stupp et al in the encapsulated nanotube of Kang et al.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Nerangis whose telephone number is (571) 272-2701.

The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Application/Control Number: 10/587,113

Page 6

Art Unit: 1796

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

7/29/2009

vn

/Vickey Nerangis/
Examiner, Art Unit 1796